



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

## **Washington Coastal Zone Management** 2016 – 2018 NOAA Coastal Management Fellowship Application

---

### **Improving implementation of Puget Sound shoreline armoring regulations**



Department of Ecology  
Shorelands & Environmental Assistance Program  
PO Box 47600  
Olympia, WA 98504-7600  
(360) 407-6224

---

Brian Lynn  
Washington State Coastal Zone Management Program Manager  
October 15, 2015

## 1. Background and introduction

The Washington Department of Ecology Shorelands Program is pleased to submit this proposal for a NOAA Coastal Management Fellow. The project addresses NOAA's *Strategic Focus* on Healthy Coastal Ecosystems, by providing coastal managers with information and tools to improve implementation of shoreline armoring regulations on Puget Sound. The project will help Ecology meet a goal of our 2016-2020 [Section 309 Strategy](#) to develop systematic approaches to improving the effectiveness of shoreline permit processes.<sup>1</sup>

This proposal describes a project that will be tailored to the specific interests and skills of the Fellow. The project is intended to build on recent reports that identify future guidance needs. Chief among these is [Soft Shoreline Stabilization: Shoreline Master Program Planning and Implementation Guidance](#), the successful product of a 2012-2014 NOAA Fellowship. The report was included in the [President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience: Recommendations to the President](#) and was noted as a good example of a state effort to use natural infrastructure to protect coastlines and enhance resilience.

The Fellow will be able to build on this solid foundation, tap into a wide range of technical and staff resources, and leverage other ongoing efforts in the region. The project will contribute to a highly visible regional priority. Ecology is well positioned to take on this project and the Fellow can be assured of strong support from existing staff and community partners. The Fellow will have an opportunity to explore, learn about and help protect Washington's diverse beautiful shorelines.

### Background

The core of Washington's Coastal Zone Management Program is the Shoreline Management Act (SMA), administered by cities and counties through locally adopted Shoreline Master Programs (SMPs) with Ecology oversight. In 2003, Ecology adopted new Guidelines for local SMPs. Over the past twelve years, cities and counties have been updating their SMPs to meet the new state requirements. This effort represents a major investment of state and local resources in plans governing shoreline activities throughout Puget Sound. The new rules have resulted in stricter scrutiny of shoreline development activities and require greater accountability for environmental outcomes.

One of the most significant and challenging policy objectives of updated SMPs is to limit unnecessary shoreline armoring. Armoring disrupts the natural process of erosion, which supplies much of the sand and gravel that forms and maintains our beaches. Armoring can affect habitat for herring, surf smelt, and endangered salmon. Approximately 28% of Puget Sound's 2,500 miles of shoreline have been armored. Concerns about impacts of armoring have been underscored by scientific work at both the national level (NRC 2007; Gittman 2015<sup>2</sup>) and within the Puget Sound region (SAW Workshop 2009<sup>3</sup>). Armoring has been identified as ["vital sign" of ecosystem health by the Puget Sound Partnership](#) – the state agency responsible for coordinating the region's shared vision for Puget Sound recovery under the National Estuary Program.

---

<sup>1</sup> Strategy, p 105

<sup>2</sup> National Research Council, 2007, *Mitigating Erosion on Sheltered Coasts*, Washington DC: National Academy Press. Gittman R. and others, 2015, [Engineering away our natural defenses: an analysis of shoreline hardening in the US, \*Frontiers in Ecology and the Environment\*](#), v 13, #6, pp 301-307.

<sup>3</sup> <http://pubs.usgs.gov/sir/2010/5254/>

New SMP regulations are required to avoid “hard” armoring (*e.g., concrete bulkheads*), by allowing new stabilization only where there is a demonstrable need to prevent damage to established structures. The requirement to demonstrate need is based on a geotechnical risk assessment that requires evaluation of multiple factors including erosion potential and infrastructure threat. Where stabilization is needed, SMPs require the use “soft” stabilization methods (*aka “living shorelines” or “green shorelines”*), unless they are infeasible on a given site. Regulations also require environment mitigation for unavoidable impacts of approved projects. The [Shoreline Stabilization Chapter of Ecology’s SMP Handbook](#) provides a good overall description of these guideline requirements.

There is great interest at the regional, state and local level in assuring that implementation of these policies achieve their desired outcomes.

### Problems and needs

Recent agency documents have significantly improved shoreline stabilization guidance available to local governments. For example:

- The 2014 [Soft Shoreline Stabilization guidance](#) by 2012-2014 NOAA Coastal Fellow Kelsey Gianou provides guidance on both planning and permitting specific to the requirements for soft shore armoring.
- The 2014 Washington Department of Fish and Wildlife (WDFW) [Marine Shoreline Design Guidelines \(MSDG\)](#) provides a technical framework for conducting site assessments to address regulatory requirements for demonstration of need and evaluation of suitability of soft shore projects.
- The 2015 [Shoreline Permitting Effectiveness through T.A.C.T \(TACT\)](#), a report by the WDFW and two Puget Sound counties, analyzed the needs and gaps of the permitting process related to effectiveness of shoreline stabilization regulations.

However, these documents identify challenges and makes recommendations for further state guidance to ensure effective implementation. Rates and patterns of armoring vary among local jurisdictions due to differences in local administrative processes, as well as to differences in geology and land use. Further, local governments differ greatly in their capacity to review proposed stabilization proposals. Therefore, this project is aimed at capitalizing on the investment in the comprehensive SMP updates and guidance documents to ensure state and local governments have the tools and information needed to follow through on the promise of the new regulations.

## 2. Goals and Objectives

The overall goal of this project is to develop improved guidance or tools for implementing shoreline stabilization regulations or improving approaches to evaluate the effectiveness of these regulations. Working with Ecology and an advisory group to accomplish this goal, the Fellow will be guided by the following objectives:

**Objective 1:** Learn about existing regulations and practice through trainings, field trips and coordination with advisory group and associated agencies.

**Objective 2:** Define the scope of the project, matching interests and skills of the Fellow with the array of needed implementation tools identified by existing documents.

**Objective 3:** Work with partners to develop guidance and/or tools for improving implementation of shoreline armoring regulations. The project will be tailored to the skills and interest of the Fellow, focusing on one or more of the following:

- Develop methods to improve the consistency and quality of evaluation tools for implementing shoreline armoring regulations.
- Develop approaches to improve the consistency and quality of monitoring requirements for shoreline armoring projects.
- Develop approaches to evaluate how regulations are being implemented, how armoring decisions are made and what kinds of projects are being built (or not being built) under new SMP regulations to build a “feedback loop” for improving administration of permits over time.

**Objective 4:** Work with partners to prepare and disseminate materials produced under the project. This could take many forms, such as a written report or manual, web site or targeted outreach materials.

### 3. Milestones and Outcomes

*Spring 2016.* Ecology will participate in the NOAA Coastal fellowship matching workshop and selection event.

*Summer 2016.* Ecology will encourage and financially contribute to a pre-Fellowship planning visit to introduce the Fellow to the geographic area, the work environment, and key project partners.

The Fellowship Project itself will be organized as follows:

| TASK | ELEMENT   | MILESTONES  | TIMELINE                  |
|------|---|---|---------------------------|
| 1    | Orientation, background research, information gathering | Meet partners; conduct policy/literature review; begin to narrow scope of project | Fall 2016                 |
| 2    | Define project scope                                    | Final project plan and schedule   | Winter 2016 - Spring 2017 |
| 3    | Develop draft products                                  | Organize and prepare draft report<br>Solicit external peer review                 | Summer 2017 - Winter 2018 |
| 4    | Develop final products                                  | Prepare final project materials   | Winter 2018 - Spring 2018 |
| 5    | Outreach and dissemination                              | Present findings to state and local groups  | Spring 2018 - Summer 2018 |

Throughout the project, the Fellow will be encouraged to attend relevant meetings, trainings, and conferences to help them better understand the issues and to introduce them to players in this work. In addition, the Fellow will be encouraged to present and discuss their project at all stages to a variety of audiences and forums.

## 4. Project Description

The Fellowship Project would have several phases:

### Orientation

Based on previous projects, Ecology expects the Fellow to spend an initial 2-3 months familiarizing themselves with state and local programs, relevant issues, and getting to know important people working on these topics.

The focus during these initial 2-3 months will be on understanding shoreline management in Washington - both state-level policies and local SMPs. Orientation may also include reviewing other programs where data on local activities has been collected and employed to evaluate program effectiveness.

The mentor and Ecology Team will introduce the Fellow to professionals and agencies involved in these issues, identify important meetings and training opportunities, and orient the Fellow to relevant resources and documents.

### Define project scope

With help from Ecology staff and advisory group, the Fellow will develop a final project plan and schedule.

### Develop draft products

The project is expected to involve meetings and interviews with state and local planning staff, field visits, and an examination of local permitting processes and data collection. The project will involve extensive coordination with the Washington Department of Fish and Wildlife, and possibly with other state or federal agencies to collect other relevant permit information. We anticipate the project will have an analytical element, involving the collection and review of local and state permit data. Depending on the interests and the capabilities of the Fellow, this could include GIS, quantitative analysis, surveys, or other forms of evaluation.

Ultimately the object is to develop tools or guidance that will improve the effectiveness and efficiency of armoring regulations. The range of approaches may include:

- Develop methods to improve the consistency and quality of evaluation tools for implementing shoreline armoring regulations. For example, these tools could address “demonstration of need/demonstration of soft shore feasibility,” or tools to evaluate soft shoreline proposals.
- Develop approaches to improve the consistency and quality of monitoring requirements for shoreline armoring projects to guide maintenance and adaptive management.
- Work with state agencies and local jurisdictions to develop methods to evaluate the effectiveness of review of stabilization proposals, considering relevant policies and circumstances that influence armoring-related decisions. The project could help to characterize and examine different approaches that jurisdictions are taking to managing armoring and highlight identified obstacles or factors contributing to effective implementation of armoring policies.

The Fellow will work with staff and advisors to assure meaningful review of the draft products before they are formally released. The report, website, or other products will be completed several months

prior to the completion of the Fellowship, providing time for the Fellow to present the results, develop outreach activities, and solicit feedback.

### Final report and products

It is expected that the Fellow will prepare a final report and/or other product. We hope the follow can also include a summary of findings and recommendations for future work based on their observations over the two-year fellowship project. The length and level of detail of the report will be determined jointly by the Ecology team and the Fellow.

### Outreach and Dissemination

The project will include dissemination of the results, including not just the report and possible web products, but also presentations to a variety of shoreline forums and meetings with local planners.

## 5. Fellow Mentoring

**Tim Gates** (Shoreline Policy Lead), will serve as the principle mentor for the Coastal Management Fellow. Tim has over 26-years of coastal management experience with Ecology and the Department of Commerce.

**Brian Lynn** (Coastal Zone Management Program Manager), will serve as the management mentor for the Coastal Management Fellow. Brian is an experienced mentor and manager, oversees Washington's Coastal Program.

**Hugh Shipman** (Ecology Coastal Geologist), will serve as technical advisor. Hugh is a leading authority on Puget Sound beaches and on shoreline hardening. He was the lead editor of a 2010 USGS Scientific Investigations Report examining the impacts of armoring on Puget Sound and has written numerous articles about coastal bluffs, erosion and landsliding, and the geologic aspects of nearshore ecology.

**Joe Burcar** (Regional Shoreline Planner) is an experienced mentor to graduate students and has over 15-years of coastal management experience with both local and state agencies. Joe was principle mentor for the 2012-2014 NOAA fellowship. He has researched and presented on soft shoreline at state, regional and national conferences.

The Coastal Fellow will work at Ecology's Headquarters in Lacey, within the Coastal/Shorelands Section of the Shorelands and Environmental Assistance Program. This will put the Fellow in direct contact with staff responsible for shoreline policy, coastal management responsibilities, and technical assistance. The Fellow will be introduced to regional Shorelands staff in the Northwest (Bellevue), Bellingham Field Office and Southwest Regional Offices, who work directly with local governments in reviewing permitted activities throughout Puget Sound.

### Advisory group/External advisors

Ecology's internal team will identify an initial group of potential project advisors and help facilitate contact. The Fellow, with assistance from the team, will determine in the first few months of the project how formal this external group will be.

Participation will depend on both the specific direction of the project, the choice of local partners for the pilot project, and may shift through the course of the Fellowship project.

Advisers will likely include:

- Washington Department of Fish and Wildlife
- Local government partners involved in implementation of Shoreline Master Programs
- Washington Sea Grant

## 6. Project Partners

The project description above summarizes how the project will build on existing state and local efforts. This project is intended to be highly interactive, involving direct collaboration with a variety of state, local and regional partners. In addition to the advisory committee describe above, Ecology foresees facilitating partnerships as a component of this fellowship with the following entities:

- Other state natural resource state agencies, which could include the Washington Department of Natural Resources, and the Puget Sound Partnership.
- Non-regulatory groups such as a Washington State University Extension Office, local county Beach Watchers, or Shore Stewards organization.
- Federal natural resource agencies and regional Native American tribal entities.

## 7. Cost Share Description

The Department of Ecology will contribute both in-kind support and \$15,000 non-federal cash match from the Department's state budget. The Coastal Management Fellow will be a member of the Department of Ecology's Shorelands and Environmental Assistance program and will have access to all equipment and services available to fellow agency staff, including office space, supplies, telephone, personal computer, software, remote calling card, fax, and internet and e-mail access. Agency vehicles will be available for work-related use.

In addition, Ecology will provide funds for necessary regional travel, training opportunities, and purchases of data products and software. Office administrative, publishing support and computer staff are available as well as a GIS and cartography center. Ecology's Core Training Program offers over 30 different training classes that will be available to the Coastal Fellow.

Ecology's Headquarters include nearby walking trails, park areas, and access to regional public transportation. Ecology will provide a transit pass for work and personal use that covers buses, van pool fares, light rail, and commuter trains within the region. The office is located 6 miles from downtown Olympia. The Fellow could live in or near Olympia, with easy access to urban amenities and excellent outdoor recreation opportunities.

## 8. Strategic Focus Areas

The project described in this proposal addresses the Strategic Focus Area for "Healthy Coastal Ecosystems." The Fellow's work will support coastal managers through creation of technical assistance tools that will promote the use of soft shore stabilization to protection healthy coastal ecosystems. The project will also contribute to "Vibrant and Sustainable Coastal Economies," by improving the transparency, predictability, and efficiency of regulations.



State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N, Olympia, WA 98501-1091 • (360) 902-2200 • TDD (360) 902-2207  
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia, WA

October 13, 2015

Fellowship Coordinator  
NOAA Office for Coastal Management  
2234 South Hobson Avenue  
Charleston, SC 29405

Re: NOAA Coastal Management Fellowship application

Dear Fellowship Coordinator:

Washington Department of Fish and Wildlife (WDFW) is pleased to support Washington Department of Ecology's proposal NOAA Coastal Management Fellowship application addressing "Improving implementation of Puget Sound shoreline armoring regulations."

This Fellowship would help advance a priority area for protecting habitat on marine shorelines. While Ecology and WDFW have made strides in improving the regulatory requirements for shoreline armoring, there are many unmet needs that would benefit from further tools and guidance. WDFW worked extensively with Ecology's most recent Coastal Fellow and we believe the partnership was successful for all parties. WDFW welcomes the opportunity to help ensure another successful Fellowship that builds on that work and addresses an important need.

We urge you to fully fund this worthwhile project.

Sincerely,

David Price

Restoration Division Manager